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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,212	02/17/2004	CHUNG-CHE YU	11987-US-PA	2211
31561	7590	02/14/2006	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE			VO, TUYET THI	
7 FLOOR-1, NO. 100			ART UNIT	
ROOSEVELT ROAD, SECTION 2			PAPER NUMBER	
TAIPEI, 100			2821	
TAIWAN			DATE MAILED: 02/14/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

**Office Action Summary**

Application No.

10/708,212

Applicant(s)

YU ET AL.

Examiner

Tuyet Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7 and 8 is/are pending in the application.  
 4a) Of the above claim(s) 4, 5 and 7 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1 and 8 is/are rejected.  
 7) ☒ Claim(s) 2 and 3 is/are objected to.  
 8) ☒ Claim(s) 4, 5 and 7 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 15 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

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### **Remarks**

Applicant's arguments filed August 15, 2005 and the election of restriction filed December 9, 2005 have been fully considered but they are not persuasive due to a new prior art that has been applied against the election of invention I, including claims 1-3 and 8, as below.

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-3 and 8 are drawn to an apparatus comprising a control driver utilizing a change of duty cycle for controlling a low noise of LEDs, classified in class/subclass 315/247.
- II. Claims 4, 5 and 8 are drawn to a control driver utilizing a change of frequency for controlling a low noise of LEDs, classified in class/subclass 315/209R.
- III. Claims 7 and 8 is drawn to an apparatus a control driver utilizing a change of phase shift for controlling a low noise of LEDs, classified in class/subclass 315/194.

These inventions above are distinct from the other because of the following reasons:

1. Inventions I, II, III are related as subcombinations disclosed as usable together in a single combination while IV relates to I, II and III as combination and subcombination usable together. The subcombination I is not required in subcombinations II or III such as a control pulse generating unit in the invention I does not require signal have a frequency or phase shift varied with time as claimed in the invention II and III respectively. Claim 8 is a generic claim, therefore is should be group to each subcombination group.
2. Because these inventions I, II and III are distinct for the reasons given above and the search required for each Group are different, restriction for examination purposes as indicated is proper.

### **Response to Arguments upon Restriction**

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3. In response to the requirement of restriction filed December 9, 2005, applicant has selected the invention I, including claims 1-3 and 8, for examining with traverse.

4. The applicant argues that the restriction is not proper due to a correlation among a duty cycle, a frequency and phase of a pulse-modulated signal in a manner that when signal with a change of duty cycle would inherently cause a change of frequency and a change of phase as well in synchronizing. In another words, the duty cycle of the pulse-modulated signal cannot be changed independently without a change of frequency and/or a phase. Examiner respectfully disagrees due to a change of a duty cycle of a signal that can be generated either with or without a change of frequency and/or phase. For example, a duty cycle of a signal is defined as following:

$$\text{duty cycle} = (T_{\text{on}}) / (T_{\text{on}} + T_{\text{off}}),$$

wherein (T on) is defined as a duration time when the signal is at its high potential level,

(T off) is defined as a duration time when the signal is at its low potential level and

(T on + T off) is defined as a cycle time or a frequency of the signal.

If (T on) being changed to a higher/lower value while (T on + T off) stays at its value, the duty cycle of the signal is in a change manner while the signal remains at its fixed/constant frequency.

The above example clearly proves the restriction provided in a correction manner, therefore, withdrawal of the restriction is not warranted in this office action.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Xu et al. (US Pub. 2003/0085749), hereinafter Xu.

Xu discloses a pulse width modulation illumination control circuit (Fig. 7) for controlling the illumination of light emitting diodes (24, [0028]), comprising:

an illumination control pulse-generating unit (34), for receiving an illumination-adjusting signal (A, marked by examiner) and generating an illumination control pulse signal (B, marked by examiner) according to the illumination-adjusting signal (A), wherein a duty cycle of the illumination control pulse signal varies with time within a predetermined range; and

a DC/DC, buck, converter (D1, 30, 32), coupled to the illumination control pulse-generating unit (34) for driving the diodes (24) according to the illumination control pulse signal (A), wherein a phase shift, a frequency and a duty cycle of the illumination control pulse signal vary with time simultaneously within a predetermined range (Figs. 9 and 10).

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3 and 8 are provisionally rejected on the ground of nonstatutory double patenting over claims 1, 2, 4 and 6 of copending Application No. 10/712,246. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Claim invention required in claims 1-3 and 8 of the instant application has been found similarly in the claims 1, 2, 4 and 6 of the copending application. A difference between of the claim in the instant application and the claim in the copending application is to drive a difference of a light source. Claim invention of the instant application is to drive light emitting diodes while the claim invention of the copending being established to drive a fluorescent lamp. It is an obvious matter of design choice to utilize a variety of light source as desired as long as it suited.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

#### ***Allowable Subject Matter***

9. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, and based upon the double patenting but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims including a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) used to overcome the provisional rejection based on a nonstatutory double patenting.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior fails to the illumination control pulse-generating unit further comprises a noise generator, for generating an analogue adder, coupled to the noise generator for a noise signal, receiving the illumination-adjusting signal and the noise signal to produce a noise adjusting signal, and signal

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loaded illumination and a comparator, coupled to the analogue adder for comparing the noise signal loaded illumination adjusting signal with a triangle wave as required in claim 2.

***Citation of pertinent prior art***

11. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Jacobs et al. (US Pat. 6,304,464) discloses flyback as LED driver.

**Correspondence**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyet Vo whose telephone number is 571 272 1830. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571 272 1834. The fax phone numbers for the organization where this application or proceeding is assigned are 571 273 8300 for regular communications and for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272 2800.

Information regarding the status of an application or status information for publicizing/unpublicizing applications may be obtained from the Patent Application Information Retrieval (PAIR) system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center (EBC) at toll free 866-217-9197.

A handwritten signature in black ink, appearing to read 'Tuyet Vo', written over a horizontal line.

Tuyet Vo

Primary Examiner

February 08, 2006



Approved to be entered  
T.V. 21/08/06

## New Sheet

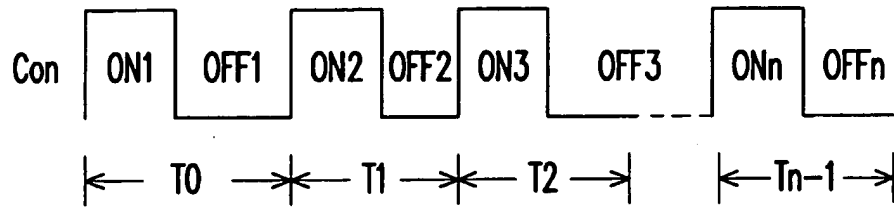


FIG. 7

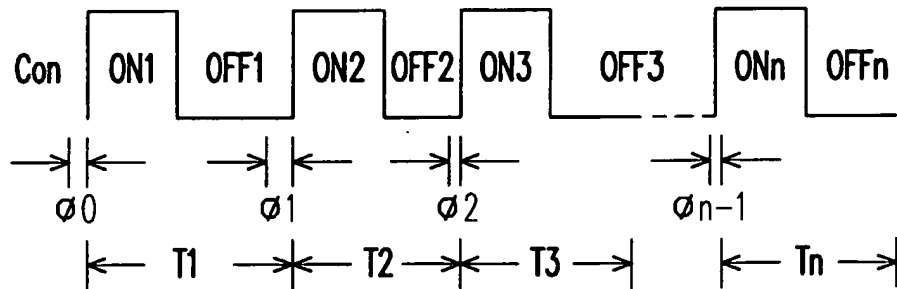


FIG. 8